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MONTHLY REPORT

ON

THE PROGRESS OF THERAPEUTICS.

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BY

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MONTHLY
REPORT ON THE PROGRESS OF THERAPEUTICS.

By W. HANDSEL GRIFFITHS, Ph.D., L.R.C.P. Ed.,

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From the Edinburgh Medical Journal for May 1876.

Ergot.—(*a.*) *Physiological Action.*—Dr P. Ebertz concludes from his investigations that the diminution in the frequency, and the increase in the fulness of the pulse, produced by ergot, is due to the direct action of the drug on the terminals of the vagus in the heart. The origin of the vagus is not affected, and the vagus itself is not paralyzed. The increased blood-pressure produced by ergotin is the result of the direct irritation by the drug of the vaso-motor centre.—*Schmidt's Jahrbucher,* clviii. p. 128.

The following are Wernich's conclusions:—In certain vascular tracts (skin, muscles, intestine, bladder, pia mater, and spinal cord), ergot produces contraction of individual arteries, especially when it is injected directly into the veins; and this action is not directly influenced by division of the sympathetic. Perhaps on account of the peculiar arrangement of the uterine vessels, contraction of these is not well marked. Contractions of the whole uterus occur after injection of ergot, but these are somewhat later than contractions of the vessels in other organs, but before the contraction of the uterine vessels—indicated by the uterus becoming paler. These contractions are probably caused by irritation of the brain (possibly anæmic), or of the motor centre of the uterus high up in the cord; for the contractions do not occur after severance of the cord.—*Virchow's Archiv,* lvi. p. 505.

(*b.*) *Effects of the Alcoholic and Aqueous Extracts of Ergot.*—Wigger's extract is an alcoholic extract, while Bonjean's is an aqueous extract. Dr H. Wohler finds that these are very dissimilar in their action. Bonjean's ergotin stimulates the depressor centres in the heart and the vaso-motor centres in the medulla oblongata, thereby producing slowness of pulse, contraction of arteries, and consequently increase of blood-pressure. Wigger's ergotin has no effect on the heart or arteries, but is an acrid poison. Both ergotins reduce temperature and retard respiration, but

Wigger's does so in a greater degree than Bonjean's. Bonjean's ergotin reduces the irritability of the peripheral motor nerves where it acts directly on them, while Wigger's increases it. Both dilate the pupil, and both diminish irritability of the sensory nerves. It would thus appear that Wigger's ergotin is useless as a hæmostatic, but, inasmuch as it increases the irritability of the peripheral motor nerves, it is well, in order to produce labour, to combine it with Bonjean's ergotin, or to give ergot itself in substance.—*Virchow's Archiv,* vol. ix. pl. 3.

In *Lo Sperimentale* for August and September 1875, Dr G. Levi, writing on the action of ergot, arrives at the following conclusions: —1. The therapeutic effects of ergot are due to the presence of phosphoric acid. 2. The diseases in which ergot proves an useful remedy are equally benefited by phosphoric acid. 3. Two distinct series of phenomena are produced by ergot: physiological (ergotism), by the vegetable principles (ergotin and ecbolin, etc.); obstetrical, by the phosphoric acid. 4. The hæmostatic and ecbolic effects are produced with equal intensity and readiness by phosphoric acid and by ergot. 5. The quantity of phosphoric acid found by analysis in recently powdered ergot, in old powder, and in the aqueo-alcoholic extract, is proportionate to the obstetric effects produced by these substances respectively.

(*c.*) *Ergot in Epistaxis.*—J. Lauber finds injections of extract of ergot to be very effectual in the treatment of epistaxis.—*Schmidt's Jahrbucher*, clx. p. 122.

(*d.*) *Ergot in the Treatment of Insanity.*—Dr Eward C. Mann, in the *New York Medical Record,* 26th June 1875, writes on the use of ergot in the treatment of insanity. The three varieties of insanity in which ergot has proved useful, are—recurrent mania, chronic mania with lucid intervals, and epileptic mania. In these it is nearly always successful in reducing excitement, in shortening the attacks, in widening the intervals between them, sometimes in preventing their recurrence altogether, and in warding off the dangerous stage of exhaustion, by which maniacal excitement is so often succeeded. Ergot operates by its influence on the non-striated muscular fibres, thereby exercising a controlling power over the calibre of the intracranial vessels. In the three forms of mania referred to, the lesion consists essentially in cerebral hyperæmia. There are present in each form increased arterial pulsation, flushing of the face, suffusion of the eyes, dryness of the mouth, and cephalalgia. These phenomena are dependent on functional and not organic changes in the brain. In epileptic mania, a combination of bromide of sodium with ergot will materially aid the action of the latter in widening the intervals between the fits, and in modifying the attacks when they occur. The bromide of sodium is preferable to bromide of potassium, as it is pleasanter to the taste and causes less constitutional disturbance, when given in large doses.

In the *Allgemein Zeitschrift für Psychiatrie*, Band xxxii. Heft. 2, Dr A. H. van Andel gives results of cases of mania which he has treated by injection of ergotin. Each injection consisted of one decigramme (about $1\frac{1}{2}$ grain) of ergotin in half a gramme each of glycerine and rectified spirit. He has employed this method of treatment in many cases, to counteract hyperæmia of the nervous centres, and with most beneficial results.

(*d.*) *Ergot in the Treatment of Fibrous Tumours of the Uterus.*—In his recent address to the American Medical Association, Dr W. H. Byford spoke at some length on the treatment of fibrous tumours of the uterus by ergot. He has collected 101 cases so treated by various authors; of these, 22 are reported cured, and 21 entirely resisted the treatment. Dr Byford prefers a fresh aqueous solution of the solid extract prepared by Squibb. A quantity equal to from one to two drachms of ergot is injected once every day or every two days. The combined use of belladonna and of bromides and iodides is advantageous.

Eserine in Asthenopia and Senile Presbyopia.—Prof. Gubler states that the disturbances of vision which succeed acute and sometimes chronic diseases, and which are due to consecutive paralysis, characterized by asthenopia and debility of the muscles of the eye, may be treated successfully by Calabar bean. In asthenopia a few drops of solution of sulphate of eserine ($\frac{1}{500}$ to $\frac{1}{200}$) put into the eye, will render the vision quite distinct in an hour or two. In presbyopia also, Prof. Gubler has applied eserine with advantage. He has found eserine to be of extreme value in retarding the advance of presbyopia.—*Gaz. Hebd.*, 4th Feb. 1876.

Gallic Acid in Albuminuria.—Dr J. T. Jamieson (*American Practitioner*) records two cases of albuminuria as a sequel to scarlet fever successfully treated by gallic acid. He gave teaspoonful doses of the saturated solution every two hours. He thinks that the gallic acid is carried unchanged to the congested and inflamed capillaries of the secernent portion of the kidney, acts as an astringent and tonic to them, and promotes their contraction, thus arresting the exudation of the red blood-corpuscles and promoting the normal secretion of urine. He has seen no bad effects arise from the free administration of the acid. It does not disturb the stomach or interfere with the appetite or digestion; but it does tend to produce constipation, so that the occasional use of a laxative is rendered necessary.

Bromide of Iron in Chorea.—Prof. da Costa prefers bromide of iron to all other remedies in the treatment of chorea. He gives it in increasing doses, commencing with five grains for a child, and rapidly increasing to twenty grains. He states that it is also of

much value in the treatment of incontinence of urine in children. Local chorea or clonic muscular spasms, as twitching of the eyelids, etc., in hysterical women, are often cured by bromide of iron, when other remedies have failed.—*New Remedies,* July 1875.

Bromide of Potassium in Epilepsy.—Dr Otto has had very favourable results in the treatment of epilepsy by bromide of potassium. Most of his patients easily bore 185 grains daily, but Dr Otto advises against exceeding 230 grains. In recent cases he gives about 150 grains daily, divided into four doses, adding a little opium if the salt produces diarrhœa. The long-continued administration of this dosage produced disturbance of the sensorium and motor paralysis, from which, however, the patients completely recovered on ceasing the administration of the drug. When given for two or three weeks, skin lesions were always manifested. These and the nervous lesions he regards as indications for discontinuing the drug or for diminishing the dose. Dr Otto believes that bromide of potassium acts in these cases by overcoming the irritability of the central ganglia and peripheral nerves.—*Archiv für Psychiatrie ; Memorabilien,* 8th April 1875.

Iodide of Potassium.—(*a.*) *Action of.*—Prof. Binz believes that in a healthy stomach iodide of potassium becomes changed, in part, by the hydrochloric acid into chloride of potassium and hydriodic acid ($KI + HCl = KCl + HI$). Another portion of the iodide of potassium is acted on by the chloride of sodium, so that iodide of sodium is formed, and, if the dose be large enough, a third portion remains unaltered. All these combinations quickly pass into the circulation. The hydriodic acid then meets with soda, and forms iodide of sodium ; but the alkaline combinations of iodine are again acted on in the tissues by carbonic acid and other acids, and iodine is set free. This free iodine has the property of combining with certain albuminous bodies; and Binz believes that in this fact lies the explanation of the therapeutic action of preparations of iodine.—*Hay's American Journal,* July 1875.

Dr Laurie, of Glasgow, holds that the one distinct and indisputable action of iodide of potassium is that of stimulating the mucous membranes. He states that in cases of chronic hard dry cough, hours of suffering may be obviated by taking advantage of the powers of iodide of potassium to restore and promote the secretion of the bronchial mucous membrane, thus relieving the congested bloodvessels, and producing comparative tranquillity of breathing. When the secretion of mucus has set in, the salt should be used with caution, or its administration discontinued.—*Brit. Med. Jl.,* 2d Jan. 1875.

(*b.*) *In Syphilis.*—Dr Joseph R. Beck thinks that in syphilis mercurials merely mask the disease. His treatment chiefly consists

in giving large increasing doses of iodide of potassium, combined with iron, Fowler's solution, and, if anæmia be present, quinine, valerian, and cod-liver oil. The doses of iodide of potassium are increased until iodism is established; the medicine is then discontinued for a week, and if, on recommencing the medicine, iodism is again induced, the patient is discharged as cured. The presence of iodism Dr Beck regards as sure evidence of perfect cure.—*Phil. Med. Times*, 13th March 1875.

Jaborandi.—(*a.*) *Physiological Action.*—Vulpian states that jaborandi increases most of the secretions, affecting first the salivary glands, then the lachrymal glands, then the cutaneous glands, next the glands of the mucous membranes, and lastly the liver, pancreas, mammæ, and kidneys. He concludes that it acts by paralyzing the inhibitory influence of the terminal branches of the sympathetic on the secreting cells.—*Progrès Médicale.*

(*b.*) *Action on the Heart, etc.*—In a valuable paper by Mr J. N. Langley, in the *Jl. of Anat. and Phys.* for October 1875, he discusses the manner in which jaborandi exerts a slowing or inhibition on the heart's action. He has invariably found that the ventricle stops beating before the auricles, although it not unfrequently happens that the auricles first show the effects of the drug. As a rule the auricles cease contracting before the sinus. Sulphate of atropia quickly restores the heart-beat, but with less and less readiness as the heart has been stopped for a longer time. The auricles show this effect most strikingly; and it would appear that the auricles have a greater tendency to functional activity than the ventricle. Their rhythmic beat is more difficult to stop, and when stopped is more easily set going again than that of the ventricle. According to Vulpian, jaborandi does not slow the heart's action if urari be previously given; he therefore concludes that the slowing is caused by stimulation of the peripheral ends of the pneumogastric inhibitory fibres on the heart. Mr Langley is led to believe, from a careful series of experiments, that jaborandi *does* slow the heart's action after urari has been given, and he concludes that it produces this slowing by acting on something else than on the inhibitory nerve-fibres going to the heart. Mr Langley found that an electric stimulus of definite strength sent into the pneumogastric of a toad, soon after the injection of jaborandi, when the heart's action is just a little slowed, produces a greater inhibitory effect on the heart than it does before the injection. In the rabbit he has not been able to determine any similar exaltation of the inhibitory function of the pneumogastric as the result of the jaborandi injections—a fact of which he does not offer any explanation. Singularly enough, this initial exalting influence ultimately gives way to exactly the contrary effect. Thus jaborandi, though it will produce its slowing effect even when the inhibitory fibres of the pneumogastric have been rendered inert by

urari, first exalts and then later on apparently paralyzes these same inhibitory fibres. Mr Langley believes that a partial explanation of these contradictory results is to be sought for in the fact that the extract of jaborandi contains other active principles besides the alkaloid pilocarpine. For pilocarpine, although behaving in a general way exceedingly like the extract of jaborandi, differs from them in this particular action on the pneumogastrics. There seems to be present in the crude extracts of jaborandi—(1) pilocarpine, the effect of which in small doses is to paralyze the inhibitory fibres of the pneumogastric with a moderate slowing only, and in large doses to increase the slowing to a stand-still; (2) some other substance or substances which exalt the inhibitory function of the pneumogastric, and, at the same time, has a powerful action in slowing the heart. When the heart has been slowed or stopped by jaborandi, the injection of atropia brings back the beat almost to its normal standard. It is affirmed that, after atropia has been given, jaborandi will not produce a slowing of the heart. Recent experiments lead to the conclusion that a definite quantity of atropia cannot prevent a proportionate definite quantity of jaborandi from producing its effects on the heart. Mr Langley brings a very interesting paper to a conclusion, by discussing the bearing of the facts described on the theory of the action of jaborandi and atropia, and of the inhibitory mechanism of the heart. He supposes that these drugs act directly on the whole nervo-muscular cardiac tissue.

In a brief article in the *Edinburgh Medical Journal* for January 1876, Dr William Craig affirms that the strained infusion of jaborandi possesses all the activity of the drug. Belladonna and its active principle arrests the salivation produced by jaborandi; thus showing that, in certain respects, we have a true antagonism between jaborandi and belladonna.

(*c.*) *Mode of Action.*—The *modus operandi* is not attributable to any local action on the salivary glands during the act of swallowing. Dr Craig injected up the rectum the infusion prepared from one drachm of the bruised leaves, and found that salivation and perspiration came on as speedily and as effectually as when the same quantity was given by the mouth; clearly proving that the active principle of jaborandi is first absorbed, and afterwards produces its remarkable physiological effects. Dr Craig has never found jaborandi affect much either the heart's action or the temperature of the body, and he has failed to observe the disturbance of vision spoken of by Mr Martindale. He believes that many of the untoward results ascribed to jaborandi are due to the swallowing of the dregs instead of using a strained infusion.

(*d.*) *Therapeutical Application.*—Dr Craig has given jaborandi in several cases of fever, when the tongue was dry and the mouth parched. The drug has been found useful in removing pleuritic effusions; and several cases of diabetes have been successfully treated with jaborandi by Professor Laycock and others.

(*e.*) *In Diabetes.*—A very well-marked case of diabetes insipidus is recorded by Professor Sydney Ringer in the *British Medical Journal*, 25th December 1875, which was uninfluenced by jaborandi, while ergot, on three occasions, had the effect of reducing the quantity of urine.

(*f.*) *As a Galactagogue.*—In the *Medical Press*, 15th September 1875, Dr Ogilvie Will records a case in which jaborandi acted as a galactagogue. A decoction of two drachms and a half of jaborandi to six ounces of water was made, and of this a tablespoonful was given thrice daily, a strong decoction being at the same time applied to the breasts. After two doses milk appeared. The drug did not cause any marked disturbance of the sudorific or salivary systems.

(*g.*) *In Orchitis.*—Dr Czernicki records a case of orchitis consequent on metastasis of mumps, which he treated successfully with jaborandi.—*Gazette Hebd. de Med. et de Chir.*, No. 14.

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